

## **Questions and Answers – NOAA Fisheries’ Draft Policy on the Role of Hatchery Production In Endangered Species Act Status Reviews and Listing Determinations for Pacific Salmon & Steelhead**

### **Questions About the Schedule & Process**

#### **Who is assisting NOAA Fisheries in building the draft policy?**

NOAA Fisheries is conferring with tribal and state natural resource agencies in the region, the U.S. Fish and Wildlife Service, and the U.S. Department of Justice (collectively referred to as “co-managers” in this document) in the development of a listing policy for public review. Although the list of recipients includes entities that may not have management authority for Pacific salmon and steelhead, NOAA Fisheries is interested in seeking advice from a broad set of co-managers with technical and policy expertise in fish and wildlife management issues.

#### **Why is a draft of the Listing Policy being released to co-managers before it is being provided to the public?**

We are providing a preliminary working draft of the Listing Policy for co-manager review to ensure that the policy is accurate, advisable, and reflects the best available science. The agency is soliciting the assistance of co-manager technical and policy experts as it builds toward proposing a policy to the public that has general co-manager support. NOAA Fisheries routinely solicits such review to ensure that its policies and actions are advisable and based on the best available scientific information.

#### **At what stage in the policy development process is this document? Is this the proposed policy?**

The document provided to co-managers is a pre-decisional working draft and should not be misinterpreted as otherwise. The draft represents the agency’s preliminary conceptualization of the policy and the relevant issues that need to be considered in evaluating the role of Pacific salmon and steelhead artificial propagation in ESA listing determinations. NOAA Fisheries is seeking co-manager cooperation in building a proposed policy for public review. It is likely that when the policy is formally proposed, it will have changed substantially from its current form.

#### **Will NOAA Fisheries consider comments from other interested parties and the general public on this draft?**

The Listing Policy is the subject of intense public interest. Nonetheless, this working draft is a preliminary and predecisional document, and is not ready for public comment. The cover letter used in distributing the draft to co-managers, as well as these *Questions and Answers* will be made publicly available on the NOAA Fisheries Northwest Region website (<http://www.nwr.noaa.gov/HatcheryListingPolicy/>) for those seeking information on the Listing Policy under development. Following co-manager review and subsequent revision, the proposed policy will be published as a notice in the *Federal Register*. Once the policy is formally proposed NOAA Fisheries will ensure that it is available to all interested parties.

NOAA Fisheries will consider comments from co-managers only at this time (see co-manager distribution list). At the time the policy is revised following co-manager

review, it will be formally proposed and open for public comment. As the proposed policy may differ substantially from the current working draft, unsolicited comments received prior to publication of the proposed policy may not be relevant. For full consideration, NOAA Fisheries encourages interested individuals to submit comments during the public comment period that opens with the publication of the proposed policy.

**When will there be a formal opportunity for public input?**

At the time the policy is revised following co-manager review, it will be formally proposed and open for public comment. NOAA Fisheries will hold several public meetings at which interested individuals are encouraged to discuss the proposed policy and provide information and comments.

**Why is NOAA Fisheries reevaluating its policy on the consideration of hatchery populations in ESA listing decisions?**

Recently, in Alsea Valley Alliance v. Evans (Alsea decision), the U.S. District Court in Eugene, Oregon, set aside NOAA Fisheries' 1998 ESA listing of Oregon Coast coho salmon (Q. kisutch), and ruled that the ESA does not allow NOAA Fisheries to list a subset of an ESU by excluding hatchery fish within an ESU from listing. Although the Court's ruling affected only one ESU, the interpretive issue raised by the ruling called into question nearly all of the agency's Pacific salmonid listing determinations involving ESUs with unlisted within-ESU hatchery populations. In response to the Alsea decision, NOAA Fisheries announced it would revise its policy on how it considers hatchery populations in making ESA listing determinations. A Court of Appeals (Ninth Circuit) has agreed to hear an appeal from appellant intervenors in the Alsea case and has stayed the District Court's order pending appeal, thereby reinstating threatened status for the Oregon Coast coho ESU. Notwithstanding the appeal and stay, and regardless of the outcome of the appeal, NOAA Fisheries continues to see value in revising and clarifying its policy regarding the role of artificial propagation in ESA listing determinations for Pacific salmon and steelhead.

**How will the new listing policy address the issue raised by the *Alsea* decision?**

NOAA Fisheries will continue making listing determinations for Pacific salmon and steelhead ESUs based on the likelihood that an ESU is self-sustaining in its natural ecosystem, and will be into the future. To be consistent with the Court's ruling in the *Alsea* decision, NOAA Fisheries will consider hatchery populations in its determinations of whether or not to list an ESU under the ESA. The policy will more clearly articulate how the agency will consider artificial propagation in conducting ESA status reviews and listing determinations for Pacific salmon and steelhead.

**Will the Listing Policy address the use of artificial propagation in ESA recovery?**

No. The Listing Policy will address artificial propagation only in the context of ESA Section 4 listing determinations for Pacific salmon and steelhead. NOAA Fisheries will separately issue guidelines for the design and implementation of artificial propagation programs for the purpose of supporting tribal treaty fisheries, recreational and commercial fisheries, species reintroduction and restoration efforts, and species conservation efforts.

**When will NOAA Fisheries propose the new policy and hatchery guidelines?**

NOAA Fisheries will draft the proposed policy following substantial co-manager review and comment. At that time NOAA Fisheries will formally propose the resulting draft by publishing it as a proposed rule. Publication of the proposed rule will open a public comment period, including public meetings. Concurrent with the publication of the proposed Listing Policy, NOAA Fisheries will share a working draft of the guidelines with co-managers this summer, and seek their cooperation in building a proposal for public review.

**Questions About Artificial Propagation and Hatchery Fish****What is the difference between a “hatchery fish” and a “natural fish”?**

The short answer is that substantial differences in performance have been observed in some instances between fish originating in hatcheries, and fish originating from naturally-spawning parents. However, it is not clear whether most of those differences are an inevitable result of using a hatchery to produce fish. Some differences may simply be the outcome of particular hatchery practices, which if changed, would yield fish that contribute to long-term self-sustainability similarly to those fish originating in the wild. The extent to which differences in the performance of hatchery fish will persist in subsequent generations, if hatchery fish are allowed to spawn naturally, is not fully known.

**What are some potential benefits of hatchery production to the conservation and recovery of Pacific salmonids?**

When natural populations are severely depressed, hatchery populations can comprise a substantial portion of the ecological and genetic diversity remaining in an Evolutionarily Significant Unit (or ESU). In such cases hatchery populations can represent a “genetic reserve”, or a potential broodstock of similar ancestry to the naturally-spawning portion of the ESU. Such a genetic reserve may be useful in buffering against immediate extinction risk, as well as in rebuilding locally depressed or extirpated populations.

“Supplementation” of declining naturally spawning populations has been used recently in an attempt to conserve declining populations. Whether hatchery fish will in fact contribute to the recovery of an ESU will depend on the quality of the hatchery fish and the reasons for decline of the natural component of the ESU. Supplementation, at the present time, is an experimental practice and there is insufficient empirical evidence to suggest whether these efforts will contribute to natural sustainability.

In addition to the potential benefits to natural populations, there are several societal benefits of artificial propagation. Hatchery production can increase harvest opportunities, satisfy legal mandates (e.g., for mitigation or tribal treaty rights), help restore functioning ecosystems, and provide an opportunity to educate the public about salmon biology and conservation issues.

**What are some potential risks of hatchery production to the conservation and recovery of Pacific salmonids?**

There is a variety of interactions between hatchery and naturally spawned fish that can harm the naturally spawning fish. If they interbreed with naturally spawning fish, they can pass on to the next generation those genetic traits that have resulted from artificial selection in the hatchery, reducing the fitness of the naturally spawning population. Juvenile hatchery fish released into the wild compete with naturally spawning fish for food and space. Hatchery fish may carry diseases that they can transmit to their wild counterparts. Hatchery fish may prey upon natural fish, and concentrations of hatchery fish may increase concentrations of predators, which will then prey upon naturally spawned fish. Because fish of hatchery and natural origin intermingle as adults, harvest targeting hatchery fish will result in harvest of naturally spawned fish. Additionally, relatively large returns from a hatchery production program can mask declining trends in the natural populations, thus increasing the risk of failure or delay in implementing appropriate management measures.

**What is being done to improve the performance of, and minimize risks posed by, hatchery fish?**

There is a great deal of information demonstrating that fish reared in a hatchery and released as smolts survive at considerably lower rates than smolts originating in the wild. Several experiments are underway to increase the juvenile survival rate through modifications in hatchery practice. The preliminary results suggest that hatchery fish can be reared in ways that produce juvenile survival rates approaching those of their naturally-reared counterparts. For example, preliminary findings of studies by NOAA Fisheries researchers indicate that survival rates of hatchery fall chinook salmon can be improved by 20 to 50 percent if they are raised in hatchery environments designed to simulate natural conditions (e.g., with overhead cover, woody debris, natural substrate, and predator avoidance training). However, there is no information indicating whether these improved hatchery practices have any effect on the performance of the progeny of naturally spawning hatchery fish. Thus, improved juvenile survival does not necessarily transform hatchery fish into the equivalent of naturally-spawned fish.

**Questions About Hatchery Populations in the Context of the ESA**

**How has NOAA Fisheries treated hatchery populations in past ESA listing determinations?**

In making ESA listing determinations, artificial production was generally taken into account as a factor for decline for an ESU. In general NOAA Fisheries did not explicitly consider whether the existence of a hatchery population or populations might reduce the risk of extinction or the likelihood of endangerment for an ESU. If NOAA Fisheries determined that naturally spawned fish were threatened or endangered, the agency then considered whether associated hatchery populations were part of the ESU, focusing on their origin and their similarity to locally adapted natural fish. Under NOAA Fisheries' interim artificial production policy for Pacific salmon and steelhead (58 FR 17573, April 5, 1993), hatchery salmon and steelhead found to be part of the ESU were listed under the ESA only if they were considered essential for recovery (i.e., if it was determined that the hatchery population contains a substantial portion of the genetic

diversity remaining in the ESU). NOAA Fisheries did not list most hatchery fish, reasoning that protecting hatchery fish would not contribute to the ESA's goal of healthy naturally reproducing populations, would place an unnecessary burden on Indian tribes and other harvesters who benefit from hatchery production, and would greatly increase the permitting requirements for stakeholders (e.g., under ESA section 10(a)(1)(A)).

### **What does the ESA say should be the focus of ESA listing determinations?**

The ESA states that one of its purposes is “to provide a means whereby the ecosystems upon which endangered species or threatened species depend may be conserved” (ESA section 2(b)). The legislative history suggests that Congress was concerned with the “balance of nature,” as reported in the Senate Report: “In hearings before the Subcommittee on the Environment it was shown that many of these animals perform vital biological services to maintain a ‘balance of nature’ within their environments” (Senate Report No. 93-307, July 1, 1973). The record includes a number of statements by Senators and Representatives emphasizing self-sustaining populations in their natural ecosystems: “restore them to a meaningful role in their and our environment” (Representative Grover, September 18, 1973); we have so altered natural habitats that “they are unsuitable environments for natural populations of fish and wildlife” (Senator Tunney, July 24, 1973); and “[t]he goal of the endangered species program is to . . . preserve [species] in their natural ecosystems . . . [and] restore such species to the point at which it is once again a viable component of its ecosystem” (Representative Sullivan, March 15, 1976).

### **What is the importance of naturally spawning self-sustaining salmon populations in our natural ecosystems?**

The presence of salmon populations in their natural habitat throughout their life-cycle is not only a requisite for maintaining the genetic fitness and local adaptation of natural populations, but it also influences other functions within the ecosystem. Salmon convey essential nutrients from the ocean to their spawning areas, are vital components of the food-web, are important competitors and predators influencing the relative abundance and composition of species, and can otherwise be instrumental determinants of ecosystem floral and faunal structure. Although it was recognized that “programs of captive production would be beneficial for rare and endangered species in order . . . to replenish the wildlife population” (Congressional Record, July 24, 1973, statement of Senator Domenici), there is no clear indication that Congress intended artificial propagation to be a replacement for natural production at the cost of disrupting the ‘balance of nature’ and the natural ecosystem. Indeed, there was concern that “[o]ur powerful technologies and our blind desire for ‘progress’ enabled us to interrupt the rhythm of nature” (Congressional Record, September 18, 1973, statement of Senator Annunzio).

### **What does the ESA say about the use of artificial propagation?**

Section 3(3) of the ESA defines “conservation” as “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary. Such methods and procedures include, but are not limited to . . . propagation.”

In Section 4(b) of the ESA, Congress requires that a determination of whether a species is threatened or endangered be made “solely on the basis of the best scientific and commercial information available” after conducting a status review and taking into account those efforts being made to protect the species by, among other things, “conservation practices”. Conservation practices, as noted above, may include artificial propagation.

**Can artificial propagation contribute to naturally spawning self-sustaining salmonid populations over the long term?**

There is no substantial scientific information of which NOAA Fisheries is aware that would demonstrate whether Pacific salmon can be successfully sustained over the long term solely through artificial propagation. The agency is aware that supplementation has been shown to be effective in bolstering the numbers of naturally spawning fish in the short term under certain conditions. However, the premise that salmon supplementation can be used to provide a net long-term benefit to natural populations remains an untested hypothesis. This does not mean, however, that artificial propagation cannot provide this type of benefit, and NOAA Fisheries is open to the future possibility.

**How will this policy affect the work of the Technical Recovery Teams?**

This policy does not affect the Puget Sound, Willamette/Lower Columbia, and Interior Columbia TRTs’ present efforts to identify populations and recommend viability criteria for listed ESUs. In the event that status reviews that apply this policy result in revised definitions of the ESUs, then NOAA Fisheries and the TRTs will review the viability criteria in light of those revisions.